REQUEST FOR CONTINUED EXAMINATION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 November 2010 has been entered.

RESTRICTION/ELECTION

Applicant is reminded that the requirement to elect a species of cell adhesion-inducing peptide and/or growth factor-derived peptide as set forth in the restriction requirement mailed 09 July 2008 was withdrawn in the previous Office action (mailed 22 July 2010). Therefore, the claim identifier “withdrawn” is incorrect for claims 11 and 12. Claims 2, 3, 10-13, 19, and 21-23 are under examination.

EXAMINER’S AMENDMENT

An examiner’s amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner’s amendment was given in a telephone interview with Attorney Steven J. Hultquist on 08 December 2010.

The application has been amended as follows:

Amend claims 2, 13, and 21, as follows:

1. **(Cancelled)**

2. **(Currently amended)** ~~**The**~~ **A** bone graft material ~~**according to claim 10,**~~ **having a cell adhesion-inducing peptide and/or tissue growth factor-derived peptide immobilized on a surface thereof, wherein (i) the peptide is immobilized on said surface in an amount of 0.1-10 mg/cm^2, (ii) the tissue growth factor-derived peptide has an addition of a CGG spacer at its N-terminal end, (iii) said surface has been modified by oxidation and nitrification to facilitate adhesion of the peptide thereto, and (iv)** ~~**wherein**~~ the cell adhesion-inducing peptide has an amino acid sequence of RGD.

3. **(Original)** The bone graft material according to claim 2, wherein the cell adhesion- inducing peptide has an amino acid sequence of CGGRGDS (SEQ ID NO: 1) or CGGVACDCRGDCFC (SEQ ID NO: 2).

4-9. **(Cancelled)**

10. **(Previously presented)** A scaffold for tissue engineering applications, which has a cell adhesion-inducing peptide and/or tissue growth factor-derived peptide immobilized on the surface, wherein the peptide is immobilized on the surface in an amount of 0.1-10 mg/cm^2, the tissue growth factor-derived peptide has an addition of CGG spacer at the N-terminal end, the scaffold is an implant, and the surface of the implant is modified by oxidation and nitrification to facilitate the adhesion of the active peptide to the surface.

11. **(Original)** The scaffold for tissue engineering applications according to claim 10, wherein the cell adhesion-inducing peptide has an amino acid sequence of RGD.

12. **(Original)** The scaffold for tissue engineering applications according to claim 11, wherein the cell adhesion-inducing peptide has an amino acid sequence of CGGRGDS (SEQ ID NO: 1) or CGGVACDCRGDCFC (SEQ ID NO: 2).

13. **(Currently amended)** The scaffold for tissue engineering applications according to claim 10, wherein the tissue growth factor-derived peptide is at least one peptide selected from the group consisting of the following peptides: (a) the amino acid sequence at positions 2-18 of each of bone morphogenetic proteins (BMP)-2, 4 and 6 [SEQ ID NO: 3 for BMP-2, SEQ ID NO: 4 for BMP-4, and SEQ ID NO: 5 for BMP-6]; the amino acid sequence at positions 24-40 of BMP-2 (SEQ ID NO: 6), the amino acid sequence at positions 47-71 **of BMP-2** (SEQ ID NO: 7), the amino acid sequence at positions 73-92 **of BMP-2** (SEQ ID NO: 8), the amino acid sequence at positions 88-105 **of BMP-2** (SEQ ID NO: 9), the amino acid sequence at positions 283-302 **of BMP-2** (SEQ ID NO: 10), the amino acid sequence at positions 355-374 **of BMP-2** (SEQ ID NO: 11) and the amino acid sequence at positions 370-390 **of BMP-7** (SEQ ID NO: 12); the amino acid sequence at positions 74-93 of BMP-4 (SEQ ID NO: 13), the amino acid sequence at positions 293-313 **of bone sialoprotein** (SEQ ID NO: 14), the amino acid sequence at positions 366-386 **of BMP-4** (SEQ ID NO: 15) and the amino acid sequence at positions 382-402 **of BMP-4** (SEQ ID NO: 16); the amino acid sequence at positions 91-110 of BMP-6 (SEQ ID NO: 17), the amino acid sequence at positions 397-418 **of BMP-6** (SEQ ID NO: 18), the amino acid sequence at positions 472-490 **of BMP-6** (SEQ ID NO: 19) and the amino acid sequence at positions 487-510 **of BMP-6** (SEQ ID NO: 20); and the amino acid sequence at positions 98-117 of BMP-7 (SEQ ID NO: 21), the amino acid sequence at positions 320-340 **of BMP-7** (SEQ ID NO: 22), the amino acid sequence at positions 390-409 **of BMP-7** (SEQ ID NO: 23) and the amino acid sequence at positions 405-423 **of BMP-7** (SEQ ID NO: 24); (b) the amino acid sequence at positions 62-69 of bone sialoprotein (SEQ ID NO: 25), the amino acid sequence at positions 139-148 **of bone sialoprotein** (SEQ ID NO: 26), the amino acid sequence at positions 259-277 **of bone sialoprotein** (SEQ ID NO: 27), the amino acid sequence at positions 199-204 **of bone sialoprotein** (SEQ ID NO: 28), the amino acid sequence at positions 151-158 **of bone sialoprotein** (SEQ ID NO: 29), the amino acid sequence at positions 275-291 **of bone sialoprotein** (SEQ ID NO: 30), the amino acid sequence at positions 20- 28 **of bone sialoprotein** (SEQ ID NO: 31), the amino acid sequence at positions 65-90 **of bone sialoprotein** (SEQ ID NO: 32), the amino acid sequence at positions 150-170 **of bone sialoprotein** (SEQ ID NO: 33) and the amino acid sequence at positions 280-290 **of bone sialoprotein** (SEQ ID NO: 34); (c) the amino acid sequence at positions 242-250 of a transforming growth factor (SEQ ID

NO: 35), the amino acid sequence at positions 279-299 **of a transforming growth factor** (SEQ ID NO: 36) and the amino acid sequence at positions 343-361 **of a transforming growth factor** (SEQ ID NO: 37); (d) the amino acid sequence at positions 100-120 of a platelet-derived growth factor (SEQ ID NO: ~~37~~ **38**) and the amino acid sequence at positions 121- 140 **of a platelet-derived growth factor** (SEQ ID NO: 39); (e) the amino acid sequence at positions 23-31 of an acidic fibroblast growth factor (SEQ ID NO: 40) and the amino acid sequence at positions 97-105 **of an acidic fibroblast growth factor** (SEQ ID NO: 41); (f) the amino acid sequence at positions 16-27 of a basic fibroblast growth factor (SEQ ID NO: 42), the amino acid sequence at positions 37-42 **of a basic fibroblast growth factor** (SEQ ID NO: 43), the amino acid sequence at positions 78-84 **of a basic fibroblast growth factor** (SEQ ID NO: 44) and the amino acid sequence at positions 107-112 **of a basic fibroblast growth factor** (SEQ ID NO: 45); (g) the amino acid sequence at positions 255-275 of dentin sialoprotein (SEQ ID NO: 46), the amino acid sequence at positions 475-494 **of dentin sialoprotein** (SEQ ID NO: 47) and the amino acid sequence at positions 551-573 **of dentin sialoprotein** (SEQ ID NO: 48); (h) the amino acid sequence at positions 63-83 of a heparin binding EGF-like growth factor (SEQ ID NO: 49), the amino acid sequence at positions 84-103 **of a heparin binding EGF-like growth factor** (SEQ ID NO: 50), the amino acid sequence at positions 104-116 **of a heparin binding EGF-like growth factor** (SEQ ID NO: 51) and the amino acid sequence at positions 121-140 **of a heparin binding EGF-like growth factor** (SEQ ID NO: 52); (i) the amino acid sequence at positions 326-350 of the cadherin EGF LAG seven-pass G-type receptor 3 (SEQ ID NO: 53), the amino acid sequence at positions 351-371 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 54), the amino acid sequence at positions 372-400 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 55), the amino acid sequence at positions 401-423 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 56), the amino acid sequence at positions 434-545 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 57), the amino acid sequence at positions 546-651 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 58), the amino acid sequence at positions 1375-1433 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 59), the amino acid sequence at positions 1435-1471 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID ~~ISTO~~ **NO**: 60), the amino acid sequence at positions 1475-1514 **of the cadherin EGF**

LAG seven-pass G-type receptor 3 (SEQ ID NO: 61), the amino acid sequence at positions 1515-1719 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 62), the amino acid sequence at positions 1764-1944 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 63) and the amino acid sequence at positions 2096-2529 **of the cadherin EGF LAG seven-pass G-type receptor 3** (SEQ ID NO: 64); and (j) the amino acid sequence at positions 54-159 of an osteoblast specific cadherin (OB-cadherin) (SEQ ID NO: 65), the amino acid sequence at positions 160-268 **of an osteoblast specific cadherin (OB-cadherin)** (SEQ ID NO: 66), the amino acid sequence at positions 269-383 **of an osteoblast specific cadherin (OB-cadherin)** (SEQ ID NO: 67), the amino acid sequence at positions 384-486 **of an osteoblast specific cadherin (OB-cadherin)** (SEQ ID NO: 68) and the amino acid sequence at positions 487-612 **of an osteoblast specific cadherin (OB-cadherin)** (SEQ ID NO: 69).

14-18. **(Cancelled)**

19. **(Previously Presented)** The scaffold for tissue engineering applications according to claim 10, wherein the implant is titanium implant.

20. **(Cancelled)**

21. **(Currently amended)** The scaffold for tissue engineering applications according to claim 10, wherein the surface ~~**of the bone graft material**~~ is immobilized with a crosslinker.

22. **(Original)** The scaffold for tissue engineering applications according to claim 21, wherein the crosslinker is any one or more selected from the group consisting of 1,4-bis-maleimidobutane (BMB), 1,11-bis-maleimido tetraethyleneglycol (BM[PEO]4), l-ethyl-3-[3-dimethyl aminopropyl] carbodiimide hydrochloride (EDC), succinimidyl-4-[N-maleimido methylcyclohexane-l-carboxy-[6-amidocaproate]] (SMCC) and sulfo-SMCC, succimidyl 6-[3-(2-pyridyldithio)- ropionamido] hexanoate] (SPDP) and sulfo-SPDP), m-maleimidobenzoyl-N-hydroxysuccinimide ester (MBS) and sulfo-MBS, succimidyl [4-(p- maleimidophenyl) butyrate] (SMPB) and sulfo-SMPB.

23. **(Previously presented)** A scaffold for tissue engineering applications, comprising:

a surface comprising bovine bone-derived mineral particles; and

one or more peptides comprising the amino acid sequence of SEQ ID NO: 6 immobilized on said surface wherein the immobilization comprises crosslinking with sulfo-SMCC.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: The claims were amended to further clarify the invention and correct typographical and antecedent basis issues.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth C. Kemmerer, Ph.D. whose telephone number is (571) 272-0874. The examiner can normally be reached on Monday through Friday, 9:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol, Ph.D. can be reached on (571) 272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ECK/
08 December 2010

/Elizabeth C. Kemmerer/
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